

**CAESAREAN SECTION FOR ACUTE FETAL DISTRESS ON PLACENTA PREVIA  
FULLY OVERLYING ACRETA WITH HEMOSTASIS HYSTERECTOMY AND  
HYPOGASTRIC ARTERY LIGATION: A CASE REPORT****Khalid Lghamour\*, Amina Lakhdar, Najia Zraidi and Aziz Baidada**Gynecology-Obstetrics and Endoscopy Department, Maternity Souissi, University Hospital Center IBN SINA,  
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**ABSTRACT**

We describe the case of a patient with a history of 2 curettages for three early abortions, who has a 34-week amenorrhea pregnancy followed by an obstetrician, the diagnosis of fully overlying placenta accreta previa is retained during follow-up. During hospitalization for an episode of genital bleeding, the diagnosis of placenta accreta previa was confirmed by ultrasound and pelvic MRI. Maternal-fetal monitoring revealed acute fetal distress on fetal heart rate recorded by external cardiotocography. An emergency caesarean section was performed, with total interannexal hysterectomy for haemostasis and ligation of the hypogastric arteries to prevent postpartum haemorrhage, resulting in a favourable postoperative outcome for both mother and fetus.

**KEYWORDS:** hemostasis hysterectomy; total interannexal hysterectomy; placenta accreta; totally overlying placenta previa; hypogastric artery ligation; postpartum hemorrhage; acute fetal distress.

**INTRODUCTION**

Postpartum hemorrhage (PPH) remains one of the leading causes of maternal mortality in Morocco. Its occurrence is frequent and often unpredictable. Rapid, codified management using obstetric and medical measures is most often effective in controlling the hemorrhage.

In the event of failure or inadequacy, arterial embolization offers an effective solution, but access is limited, as most maternity hospitals do not have an interventional radiology center, and patients' hemodynamic conditions often limit transfer possibilities. Hemostasis surgery therefore remains the last resort, and must be mastered by all obstetricians.

A totally overlying placenta accreta previa is a serious situation for the obstetrician. When the pregnancy is monitored and the diagnosis of placenta accreta previa is made during follow-up, delivery by Caesarean section must be planned and organized in such a way as to leave nothing to chance.

The occurrence of acute fetal distress in a pregnancy with placenta accreta previa, as described in our case, calls for emergency caesarean section to save the fetus, and, in the absence of embolization, total hysterectomy

with hypogastric artery ligation to prevent post-partum haemorrhage.

**CASE REPORT**

Patient aged 44, asthmatic for 7 years on treatment, gravida 5, para 2, the first pregnancy ended in an early spontaneous uncured abortion, the second and third ended in early cured abortions, the fourth pregnancy ended in caesarean section for pre-eclampsia, the current pregnancy is being monitored by an obstetrician and estimated at 8 months.

The patient presented with genital bleeding from a totally overlying placenta previa. On admission, the patient was normotensive, with no external genital bleeding. The vaginal touch not done.

obstetrical ultrasound showed an evolving monofetal pregnancy, positive cardiac activity, cephalic presentation, gestational age of 34 weeks' amenorrhea, normal amounts of amniotium fluid, estimated fetal weight of 2700g, totally overlying placenta previa with signs of accretion: placental lacuna, abnormal vascularization, loss of hypoechoic myometrial border and irregularity of the bladder wall.

The patient was admitted to hospital and put on tocolysis with loxen and fetal lung maturation with celestene.

Fetal heart rate recorded by external cardiotocography was normal on admission.

Regular maternal-fetal monitoring was instituted, and the patient underwent a pelvic MRI, which revealed a low-lying, fully recovered placenta accreta.

During monitoring, the fetal heart rate was recorded, indicating acute fetal distress. A Caesarean section was therefore indicated for acute fetal distress in a totally overlying placenta accreta praevia.

A multidisciplinary team consisting of obstetricians, urologists, resuscitators and pediatricians carried out the operation. The Caesarean section was performed under general anaesthesia, with a high corporal hysterotomy incision, and extraction of a male newborn, birth weight 2600g, apgar:2/5/8. Amniotic fluid clear. The newborn is taken care of by the pediatrician.

On exploration, placenta accreta invading the lower segment of the uterus, with no signs of invasion of the bladder or other nearby organs.

Hysterorrhaphy is performed, with the placenta left in place inside the uterus without delivery, sectional ligation of the round ligament arteries, sectional ligation of the utero-ovarian arteries and sectional ligation of the uterine arteries.

Ligation of the right and left hypogastric arteries, followed by total interannexal hysterectomy. Transfusion of 2 packed red blood cells. An intra-abdominal drain was left in place. At the end of the procedure, the patient was hemodynamically stable and diuresis was preserved. The procedure was uneventful. The patient was then transferred to the intensive care unit for monitoring and management.

The hysterectomy specimen was sent for anatomopathological study, which confirmed the presence of a totally covering placenta praevia in the lower segment of the uterus.

Post-operative care is straightforward for both mother and fetus.



**Figure 1: Placenta praevia is totally overlying on endovaginal ultrasound, with signs of accretion: placental lacuna, abnormal vascularization, loss of hypoechoic border of myometrium and irregularity of bladder wall.**

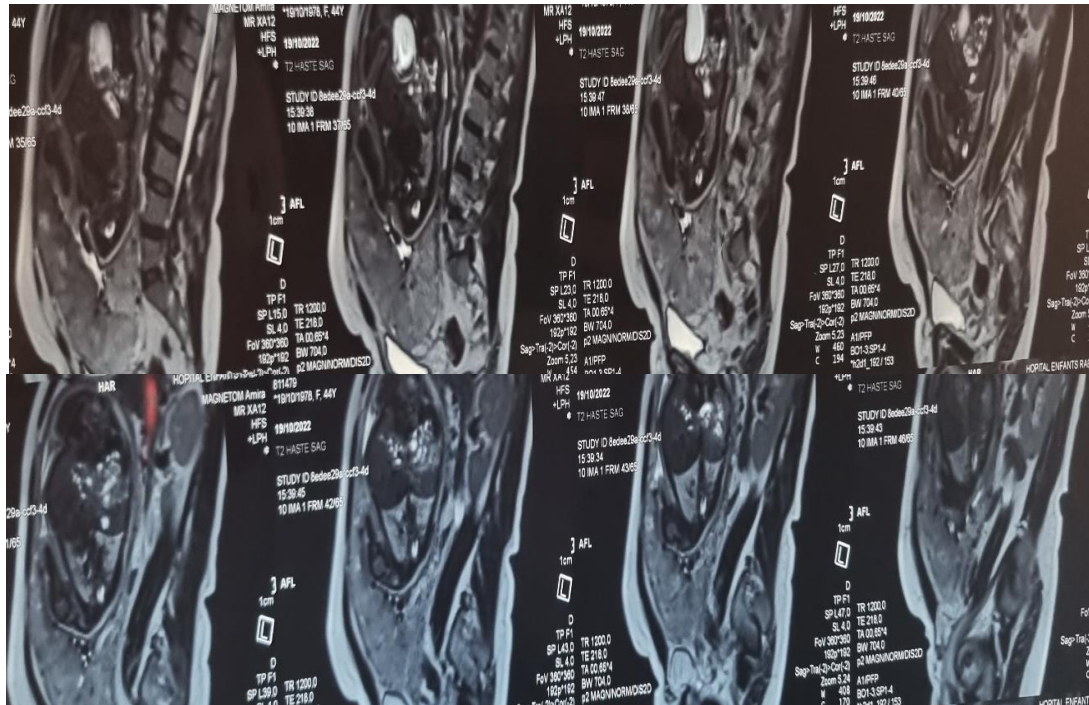


Figure 2: Pelvic MRI showing placenta accreta previa.

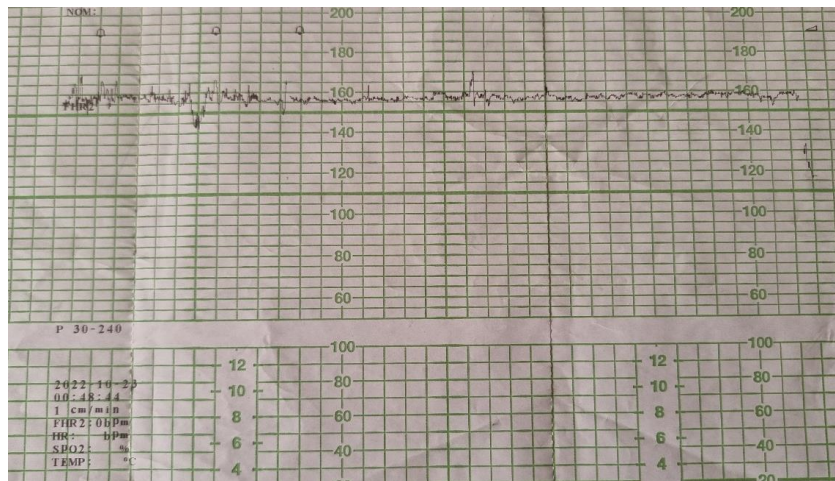


Figure 3: Fetal heart rate recorded by external cardiocography showing acute fetal distress.

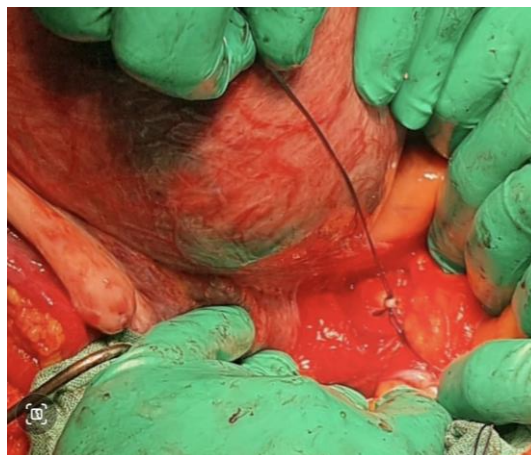


Figure 4: Ligation of the right hypogastric artery after fetal extraction, suture of the high corporal hysterotomy, sectional ligation of the round ligament arteries, sectional ligation of the utero-ovarian arteries, sectional ligation of the uterine arteries. the placenta is left in place inside the uterus.

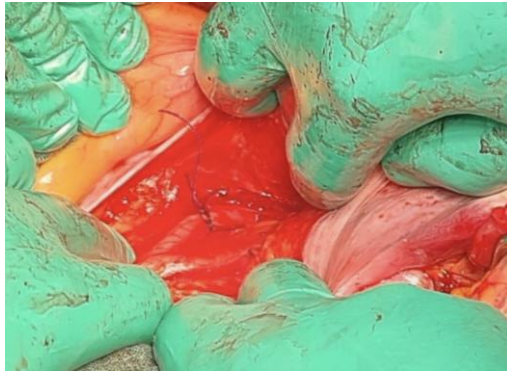


Figure 5: Ligation of the left hypogastric artery.

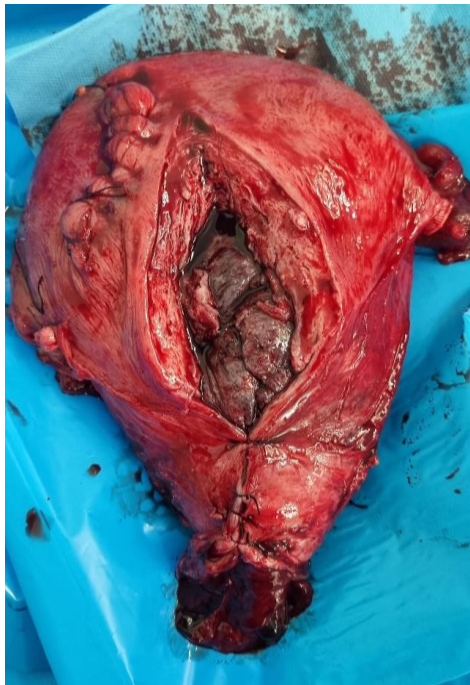


Figure 6: total interannexal hysterectomy after hypogastric artery ligation.



Figure 7: Total hysterectomy specimen, posterior aspect of the uterus.



**Figure 8: fully overlapping placenta previa with accretion in the lower segment.**

## DISCUSSION

Placenta previa (PP) is characterized by the abnormal implantation of placental tissue overlying the endocervical os. Placental implantation within 2 cm of the endocervix, but not overlying the os, is termed lowlying placenta (LLP).<sup>[1]</sup> As the delineations of previa have recently changed, we use the term previa to indicate PP or LLP. The incidence of previa worldwide is estimated to be 1 in every 200 pregnancies.<sup>[2,3]</sup>

Previa is associated with increased maternal morbidity and mortality.<sup>[1]</sup> Women diagnosed with previa are at increased risk of postpartum hemorrhage<sup>[1,4]</sup>, the leading cause of maternal morbidity and mortality worldwide.<sup>[4]</sup>

Placenta previa often requires iatrogenic preterm birth (PTB) before 34 weeks because of maternal bleeding or spontaneous preterm labor.<sup>[5,6]</sup> In a United States population-based study of live births, approximately 16.9% of women with placenta previa deliver before 34 weeks.<sup>[6]</sup>

Women with previa are at increased risk of requiring blood transfusions, post-partum emergent hysterectomy, and longer duration of hospitalization postpartum.<sup>[1,7]</sup>

Subsequently, neonates born to women with previa have been shown to have lowered APGAR scores, reduced birth weight, required mechanical ventilation, required neonatal intensive care unit admission, and an increased risk of respiratory distress syndrome.<sup>[1,7]</sup> In order to reduce the risk of morbidity and mortality for both the mother and neonate, it is recommended that women with PP deliver via cesarean between 36 weeks and 37 weeks 6 days.<sup>[8]</sup> Risk factors associated with the development of previa have been well-established. Maternal risk factors supported by the literature include advanced maternal age (AMA), history of stillbirth, history of cesarean

delivery, history of dilatation and evacuation, gravidity, tobacco use, and substance abuse.<sup>[7,9,10]</sup> Most cases of previa are diagnosed in the second trimester; of these, 90–95% resolve by the third trimester.<sup>[11,12]</sup> The remainder is considered persistent placenta previa (PPP).

A history of cesarean delivery is a well-documented risk factor for PPP. A study found that identification of previa at advancing gestational age directly correlated with the increased risk of persistence.<sup>[13]</sup> Another study found that posterior placental location had a stronger likelihood of PPP.<sup>[14]</sup>

If there is a history of cesarean section, placenta previa increases the risk of placenta accreta.

Management of placenta previa is expectant and involves avoidance of digital vaginal examination.

Transvaginal ultrasound is more accurate than transabdominal for diagnosing placenta previa and will probably be used with increasing frequency in difficult cases.<sup>[15,16,17]</sup>

The diagnosis of complete placenta previa was made when the internal cervical os was covered by placental tissue, it was defined as central if the placental edge was not visualized by TVS examination, it was defined as low-lying, when the lower edge of the placenta was within 3 cm from the internal cervical os.<sup>[18]</sup>

Magnetic resonance imaging has been shown to be more accurate than transabdominal ultrasound for diagnosing placenta previa.<sup>[19]</sup>

Placenta accreta is defined as abnormal placentation such that the villi attach directly to the myometrium, without an intervening decidua. A definitive diagnosis can only

be made from histologic findings, but assumptive diagnosis should be made if there is difficulty inseparating the placenta.

Obstetrician Frederick C. Irving and pathologist Arthur T. Hertig of Boston Lying-in Hospital are credited with publishing the first case series of placenta accreta in 1937.<sup>[20]</sup>

The incidence of placenta accreta in a recent large-scale study was 1 in 111 deliveries.<sup>[21]</sup> It is believed that the rising incidence may be attributed to the rising number of pregnancies with risk factors, including previous cesarean delivery, advanced maternal age, high gravidity, multiparity, and previous curettage and placenta previa.<sup>[21]</sup>

This progression appears to directly correlate with the increase in alterations of the uterine lining during the patient's genital life and more particularly with the increased rate of caesarean sections during the period of the last five decades.

Maternal age is correlated with an increased risk of developing the disease. Miller *et al.* found an increase in incidence of 14.6% in patients over 35 years, these women represented 45% of his study.

Multiparity is also one of the risk factors, either by facilitating trophoblastic invasion due to sensitization of the uterine immune system to paternal genes, or by occult infectious sequelae of a first childbirth.<sup>[22]</sup>

The history of curettage, placenta previa and previous cesarean delivery in our case are most probably risk factors for placenta accreta.

Antenatal diagnoses of placenta accreta can be made by color Doppler ultrasonography<sup>[23,24]</sup>, magnetic resonance imaging<sup>[25]</sup>, and elevated serum-fetoprotein levels.<sup>[26]</sup> Color Doppler ultrasound gives the most specific diagnostic criteria such as diffuse or focal intraparenchymal placental lacunar flow, bladder-uterine serosa interphase hypervascularity, prominent subplacental venous complex, and loss of subplacental Doppler vascular signals.<sup>[24]</sup> However, the ultrasonographic findings at first admission in this case were unremarkable except for a low-lying placenta.

Cesarean hysterectomy remains the gold standard treatment for placenta accreta. Conservation is considered only when the patient's bleeding is not excessive, hemodynamics are stable, and further fertility is desired.

The occurrence of acute fetal distress in a 44-year-old patient with a 34-SA pregnancy and a completely overlying placenta accreta previa necessitated an emergency caesarean section and hemostasis hysterectomy with hypogastric artery ligation to prevent

postpartum hemorrhage, in the absence of embolization options.

Ligation of the hypogastric arteries to control postpartum haemorrhage was described by Reich in 1961.<sup>[27]</sup> It is always performed bilaterally, and involves tying the anterior trunk of the hypogastric artery about 2 cm from the iliac bifurcation, in order to respect the posterior gluteal branches. This procedure controls hemorrhage in 40% to 100% of cases, but is associated with a poor surgical reputation due to the difficulty of performing it.<sup>[28]</sup>

The procedure involves a 5-6 cm longitudinal transperitoneal approach to the iliac bifurcation. To guide the peritoneal incision zone, the common iliac artery is located by finger palpation, as it divides opposite the promontory into the external and internal iliac arteries.

Imperative identification and control of the ureter on the table, which will be pushed inwards to facilitate exposure of the operative area and prevent the risk of ureteral injury, opening of the vascular sheath of the iliac vessels, locating the external iliac artery externally, then the external iliac vein in depth, and finally the hypogastric artery. Dissection of the hypogastric artery over a length of 3 to 4 cm, after opening the adventitia to avoid venous wounds. Dissect the vessel in its jacket and pass the dissector between the arterial wall and its sheath, which protects it from venous injury. During this phase, don't hesitate to grasp the artery with vascular forceps, which facilitates mobilization and displacement of adjacent structures. Pass deep into the artery under visual control, using a square dissector introduced perpendicularly to the vessel to avoid damaging the underlying vein, then ligate with an absorbable braid such as Vicryl 1.

Finally, the pedal pulse should always be checked to ensure that there is no ligation of the external iliac artery.

Exposure is facilitated by externalization of the uterus, which is pulled forward and away from the side concerned. Then, the wall is spread by valves or an autostatic retractor. Pull the uterus upwards and forwards, which facilitates tensioning of the planes. Secure the ureter, which should always be isolated on the table, or push back the internal peritoneal flap containing it, which protects it and exposes the vascular zone. It does not seem necessary to systematically locate the posterior trunk of the hypogastric artery, which increases the operative risk. The operation can be performed 2 cm from the bifurcation without any consequences.<sup>[29]</sup> Finally, you should not hesitate to ask another experienced colleague to assist you during the initial procedures.

## CONCLUSION

Fully overlying placenta accreta previa is a serious obstetric situation for the mother, the fetus and the

obstetrician. when the diagnosis is made during pregnancy monitoring, Caesarean section must be planned and organized. the occurrence of acute fetal distress requires emergency extraction. Total hemostatic hysterectomy with hypogastric artery ligation is the last resort for preventing post-partum hemorrhage in the absence of hypogastric artery embolization.

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